

REMARKS/ARGUMENTS

The Examiner objected to claims 4, 5, 7-12, 16, 17, 19-24, 28, 29, 31-36, and 39 in the Office Action Summary page. However, the Examiner did not state any reasons for objection to these claims in the Office Action, such as objections to informalities or indicate that these claims would be allowed if written in independent form including the requirements of base and intervening claims. Applicants request that the Examiner state the basis for the rejection to allow the Applicants to address the objection if the Examiner maintains his rejection of the claims..

Applicants submit that the objected to claims 4, 5, 7-12, 16, 17, 19-24, 28, 29, 31-36, and 39 are patentable in their current form over the cited art because they depend from one of independent claims 1, 13, and 25, which are patentable over the cited art for the reasons discussed below. Applicants request that the Examiner make the next office action non-final to allow Applicants to amend these claims if necessary to overcome the objection because the Examiner did not state any grounds for the objection which would allow Applicants to respond to the objection.

Applicants renumbered the last claim as claim 39, which is the number the Examiner used to refer to the last claim.

The Examiner rejected claims 1-3, 6, 13-15, 19, 25-27, 30, 37, and 38 as anticipated (35 U.S.C. §102(b) by Seto (U.S. Patent No. 5,646,670). Applicants traverse for the following reasons.

Claims 1, 13, and 25 concern generating a table for enhancing the print quality of input raster pel data, and require: generating an output value for different patterns of pel data, wherein each output value indicates a sub-pulse width power to charge to a sub-pel region within a pel and position information indicating the justification of the sub-pel region within the pel; and forming a look-up table from the generated output values that enhances print quality.

The Examiner cited “density images” and “minimum to maximum density values” in Seto as disclosing the claim requirement of generating an output value for different patterns of pel

data. (Office Action, pgs. 2-3) The Examiner did not cite to specific sections in Seto, other than reference to the above terms.

Col. 16, lines 6-32 of Seto mentions a toner saving image converter and zigzag replacing image data values. A comparator inputs an 8 bit input image data and compares the data with a predetermined threshold. If the input image data value is less than the threshold value, then the selector selects the A-input terminal, otherwise the B-input terminal for the input image is selected to replace every other pixel with zero. Col. 21, lines 48-60 of Seto mentions how image printing generally requires high toner density and minimum-level toner density.

The Examiner did not cite any section of Seto that discloses the claim requirement of generating an output value for different patterns of pel data. The above cited Seto discusses generating an output, which may be zero, based on the input image data. The above cited Seto does not disclose the claim requirement generating an output value for different patterns of pel data.

The Examiner cited M-dots in Seto as disclosing the claim requirement that each output value indicates a sub-pulse width power to charge to a sub-pel region within a pel and position information indicating the justification of the sub-pel region within the pel. (Office Action, pg. 3) Applicants traverse.

FIGs. 14b, 15b, and 17b illustrate printed pixels, where the main scanning direction has M-Dot positions of $m+1$ to $m+14$. (Seto, col. 7, lines 16-33; col. 15, lines 11-28) Nowhere does the discussion in Seto concerning the printed M-Dots disclose the claim requirement that each output value indicates a sub-pulse width power to charge to a sub-pel region within a pel and position information indicating the justification of the sub-pel region within the pel.

Although FIGs. 14b, 15b, and 17b shows sub-pels in adjacent pels, nowhere does the discussion concerning these figures in col. 15 of Seto disclose that the output value indicates a sub-pulse width power to charge to a sub-pel region within a pel and position information indicating the justification of the sub-pel region within the pel.

The Examiner found that "max F0" discloses the claim requirement of information indicating the justification of the sub-pel region within a pel. (Office Action, pg. 3) Applicants traverse. The Applicants could not locate any "max F0" in the Seto reference. Further, nowhere does Seto disclose that this "max F0" comprises position information indicating the justification of the sub-pel region within the pel.

The Examiner found that a "LUT (RAM 35)" element of Seto discloses the claim requirement of forming a look-up table from the generated output values that enhances print quality. The Examiner did not cite to any specific sections of Seto when referencing this LUT element.

Applicants note that col. 19, lines 1-20 discusses a LUT, e.g., RAM or ROM, which comprises conversion data, also referred to as the γ corrector 1152 for printing image data. The γ corrector 1152 performs image conversion in toner saving mode to convert the overall image density to a lower density. (Seto, col. 16, lines 64-67). Col. 19, lines 1-20 of Seto mentions that the LUT outputs data to a D/A converter which converts the data into an analog voltage signal. Nowhere does the cited Seto disclose the claim requirement of forming a look-up table from the generated output values that enhances print quality, where the output values are for different patterns of pel data.

If the Examiner maintains the rejection of these claims, Applicants request that the Examiner cite to specific sections of the cited references that disclose the dependent claim requirements. See, 37 CFR 1.104(c)(2) ("When a reference is complex or shows or describes inventions other than that claimed by the applicant, the particular part relied on must be designated as nearly as practicable"); MPEP 707, pg. 700-100.

Accordingly, claims 1, 13, 25 are patentable over the cited art because the cited art does not disclose the additional requirements of these claims.

Independent claim 37 is patentable over the cited art because claim 37 substantially includes the output value requirements of claim 1 in computer readable format. Applicants submit that claim 37 is patentable over the cited art for the reasons discussed with respect to

independent claims 1, 13, and 25 concerning the output value for different patterns of pel data, wherein each output value includes: (i) a sub-pulse width power to charge to a sub-pel region within a pel, and (ii) position information indicating the justification of the sub-pel region within the pel.

Claims 2, 3, 6, 14, 15, 19, 26, 27, 30, 37, and 38 are patentable over the cited art because they depend from one of claims 1, 13, and 25, which are patentable over the cited art for the reasons discussed above. Moreover, the following claims provide further grounds of patentability for the reason discussed herein.

Claims 3, 15, and 27 depend from claims 1, 13, and 25 and further require that one output value is generated for a subject pel depending upon the pattern of pels surrounding the subject pel, wherein there is one output value for each possible pattern of surrounding pels. The Examiner found that col. 14, lines 14-24 of Seto discloses the requirements of these claims.

(Office Action, pg. 3).

The cited col. 14 mentions that a triangular wave generator generates a triangular wave based on the image signal reading clock. Upon 200 dpi PWM, one of the six phases of the clock signal outputted is selected. Nowhere does this cited col. 14 anywhere disclose that one output value is generated for a subject pel depending upon the pattern of pels surrounding the subject pel, wherein there is one output value for each possible pattern of surrounding pels. There is no mention anywhere in the cited col. 14 of generating output values depending on the pattern of surrounding pels as claimed.

Accordingly, claims 3, 15, and 27 provide additional grounds of patentability over the cited art because the cited Seto does not disclose the additional requirements of these claims.

Claims 6, 18, and 30 depend from claims 1, 13, and 25 and further require that the output value for the sub-pulse width power is generated by adjusting a base sub-pulse width power by weights indicating the affect of a subject black pel on surrounding pels.

The Examiner cited 1P and 2P clock control phases of Seto and the m_Dots. (Office Action, pg. 3). The Examiner did not cite to any specific section of Seto discussing these

referenced clock control phases. Seto discusses output signals from a multiple phase shift frequency divider that generates six clocks having different frequency phases, and that the selector selects one of the six clocks in accordance with the value of an input 3 bit selection signal, and outputs the selected clock as a signal. (Seto, col. 14, lines 24-42)

The Examiner has not cited any part of Seto, including the above mentioned col. 14, that discloses that the output value for the sub-pulse width power is generated by adjusting a base sub-pulse width power by weights indicating the affect of a subject black pel on surrounding pels.

If the Examiner maintains the rejection of these claims, Applicants request that the Examiner cite to specific sections of the cited references that disclose the dependent claim requirements, including the requirement that the output value is generated by adjusting a base sub-pulse width power by weights indicating the affect of a black pel on surrounding pels.

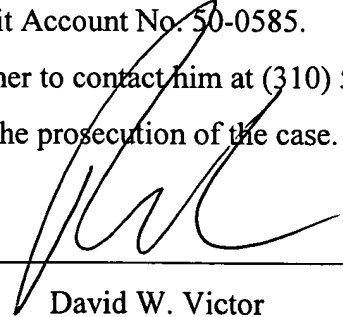
Accordingly, claims 6, 18, and 30 provide additional grounds of patentability over the cited art because the cited Seto does not disclose the additional requirements of these claims.

Conclusion

For all the above reasons, Applicant submits that the pending claims 1-39 are patentable over the art of record. Applicants have not added any claims. Nonetheless, should any additional fees be required, please charge Deposit Account No. 50-0585.

The attorney of record invites the Examiner to contact him at (310) 553-7977 if the Examiner believes such contact would advance the prosecution of the case.

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